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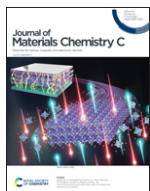


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Surface ligation stage revealed through polarity-dependent fluorescence during perovskite nanocrystal growth†



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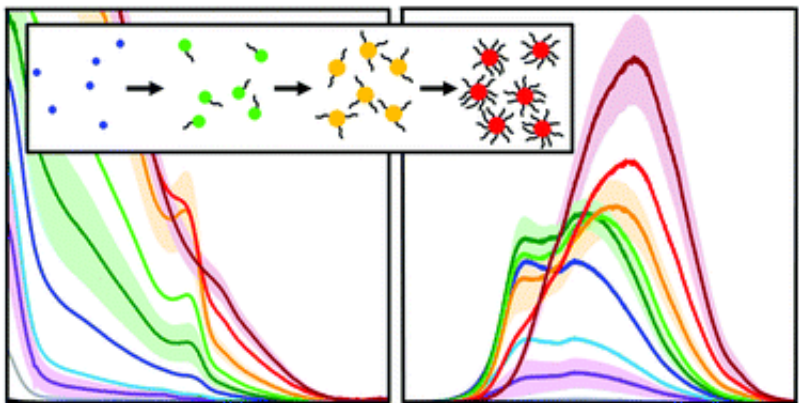
[James C. Sadighian](#), ^a [Michael L. Crawford](#), ^a [Timothy W. Suder](#) ^{abc} and [Cathy Y. Wong](#) ^{*ade}

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Abstract

Methylammonium lead iodide perovskite (MAPbI₃) nanocrystals (NCs) exhibit favorable photophysics for a range of light emitting applications. A comprehensive mechanistic understanding of the nucleation and growth processes for these NCs is still elusive. Absorbance and fluorescence spectra were measured during a NC synthesis with kinetics limited by precursor solvation using a rapid sampling technique wherein syringe filters quench NC growth. The signal from well-capped NCs in the

reaction mixture was isolated by the use of polar syringe filters, enabling spectroscopic observation of the surface ligation process. Our results indicate that the formation of these NCs involves a single stage of nucleation and growth, followed by a terminal surface ligation stage.



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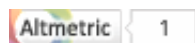
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